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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/787,129  | 02/27/2004  | Yoshinori Muramatsu  | Q80098              | 4677             |
| 23373   | 7590        | 05/18/2005           | EXAMINER            |                  |
| SUGHRUE MION, PLLC<br>2100 PENNSYLVANIA AVENUE, N.W.<br>SUITE 800<br>WASHINGTON, DC 20037 |             |                      | LUU, AN T           |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2816                |                  |

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

8M

**Office Action Summary**

Application No.

10/787,129

Applicant(s)

MURAMATSU, YOSHINORI

Examiner

An T. Luu

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 2 and 5-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2-27-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3-4 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, line 13, it is unclear if the limitation "a control signal" is the same as that of line 14 of claim 2. This issue also occurs in claim 4, lines 8 and 46.

In claim 4, line 5, it is unclear if the limitation "a fourth electric potential" is the same as that of line 24 of claim 2.

In claim 10, the recitation of a third and fourth \_\_\_\_ transistors do not have a clear antecedent basis since there is no first and second \_\_\_\_ transistors recited in its parent claim (i.e., claim 1).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by the Mucke et al reference (US Patent 6,268,778).

Mucke et al discloses in figure 7 a voltage controlled oscillator (VCO) comprising a resonator (104) including first and second output (i.e., common node of L1 and Q1; and common node of L2 and Q2) terminals, for generating complementary oscillating AC signals output from the first and second output terminals, respectively, by way of differential amplifier 108; an amplification unit (Q1 and Q2) for maintaining upper peak levels of waveforms of the signals output from the first and second output terminals at a first electric potential (i.e., positive amplitude) and maintaining lower peak levels of the waveforms at a second electric potential (i.e., negative amplitude) lower than the first electric potential; and a power supply circuit (Bias circuit 130) for applying at least one of the first electric potential and the second electric (i.e., different levels of Ibias 134) potential to the amplification unit, wherein the capacitance of the resonator is capable of being varied continuously and also stepwisely, (as shown in figures 1 and 5) and wherein when the capacitance of the resonator is varied stepwisely, at least one of the first electric potential and the second electric potential is varied stepwisely such that the difference between the first electric potential and the second electric potential increases with increasing capacitance of the resonator (i.e., stepwise change in Ibias leads to stepwise potential applied to the resonator 104) as required by claim 1.

As to claim 11, the VCO of claim 1 is a local oscillator in a phase locked loop (col. 10, lines 14-15 wherein application number 09/304,457 has become US Patent 6,211,745).

***Allowable Subject Matter***

5. Claims 2 are 5-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 3, 4 and 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose an VCO comprising elements being configured as recited in claims. Specifically, none of the prior art teaches or suggests, among other things, the limitations of “one or more first switches”; “one or more second switches” and “a current mirror circuit” as recited in lines 11-18 and 20-49 of claim 2; and a structure of the amplification as recited in claim 10. Claims 3-9 are allowable as being dependent of claim 2.

***Conclusion***


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to An T. Luu whose telephone number is 571-272-1746. The examiner can normally be reached on 7:30-5:00.

Art Unit: 2816

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

An T. Luu  
5-10-05 

**Margaret R. Wambach**  
**Primary Examiner**

